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A Preliminary Communication

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Asphyxia is the cause of death in strychnine poisoning, at least in most cases. Having this in mind Shaklee and Meltzer, about a year ago, began a series of experiments in which the availability of the method of intratracheal insufflation in strychnine poisoning was tested. The experiments were made on dogs, strychnine being administered intravenously. From a recent publication of these authors[1] the following few points may be briefly mentioned here. It was established that 0.4 mgr. strychnine per kilo body-weight is invariably a fatal dose for the dog when administered intravenously; the animals dying in less than an hour. It was further found that intratracheal insufflation alone can neither save the life of the animal nor efficiently suppress strong convulsions. The authors obtained, however, satisfactory results, when the convulsions were abolished by means of curare, while the respiration was sustained with the aid of intratracheal insufflation. In addition, the animals received intravenously, variable quantities of Ringer, to expedite the renal elimination of the strychnine as well as of the curare. Of six dogs which received 0.5 mgr. strychnine per kilo body-weight, that is, more than the minimal fatal dose, and were subsequently treated by the described method, five survived. Of twenty-two dogs which received 0.8 mgr. strychnine per kilo body-weight, that is, twice the fatal dose, thirteen animals survived the poisoning.

[1]Berlin. Klin. Wochenschrift, 1910. No. 39.

We wish to report now on a series of experiments in which the convulsions were controlled by ether. These experiments were begun by Dr. Shaklee before his departure for Manila; we wish to give him herewith due credit.

We shall state our results very briefly. In twenty dogs which received intravenously 0.8 mgr. strychnine for each kilo body-weight the convulsions were controlled by means of ether, administered by intratracheal insufflation for many hours. In addition, the animals reveived intravenously variable quantities of Ringer. We shall not enter upon further details. *All the animals thus treated recovered completely from the strychnine poisoning and when killed later after various intervals the autopsy revealed nothing abnormal.* The average time during which the animals were treated by insufflation and ether amounts to about four and a half hours. The longest period was seven hours. During the entire procedure the animals did not seem to be in much danger, either from the effect of strychnine or from that of ether. *They did not require close watching.*

Of six dogs which received 0.8 mgr. strychnine per kilo body-weight and were treated by ether and insufflation but received no Ringer (controls), only three animals recovered from the poisoning.

In several dogs the effects of ether anesthesia alone was tested, that is, without insufflation and without the administration of Ringer. This series comprises only 9 dogs all of which received doses of strychnine exceeding the fatal one. We shall not discuss the results in detail. Of the nine dogs five succumbed. Four of these dogs received 0.8 mgr. strychnine per kilo, of which only one survived. Besides the high mortality, the plan of treating strychnine poisoning by the ordinary method of ether anesthesia is objectionable on account of the danger to which the animal is continually exposed and which necessitates the greatest attention and care. Only a degree of anesthesia which borders hard on the danger line is capable of controlling satisfactorily the effects of a fatal dose of strychnine.

We are studying also the availability of chloroform and other measures in strychnine poisoning. We are not yet prepared to

mention any details of these studies; but we may state here that according to our present experience, chloroform, even when administered by intratracheal insufflation is a much less desirable means of treating strychnine poisoning than ether.

On the basis of our experimental experience it seems to us *that the above mentioned procedure, consisting of ether anesthesia, intratracheal insufflation and intravenous infusion of Ringer's solution, offers a very effective method of treatment for strychnine poisoning in animals. We see no reason why it should not be available also for human cases.*